

**ABSTRACT OF THE DISCLOSURE**

Assay device which is able to detect molecules which inhibit the binding of a ligand to a receptor using extremely small quantities of ligand and receptor sample. Such devices are useful in the discovery of molecules which may modulate the activity of biologically important target molecules. The device comprises a microfabricated diffusion chamber into which is introduced in mixture of a test compound, a receptor and a ligand for the receptor. Test compounds which can prevent binding of the ligand to the receptor are identified by detecting the presence of ligand outside the area of introduction of the mixture in the diffusion chamber.